

This listing of claims will replace all prior versions,
and listings, of claims in the application:

1 Claim 1 (currently amended): A color reproduction system
2 comprising:

3 tristimulus value calculation means for calculating
4 tristimulus values under observation illumination light
5 corresponding to a spectral reflectance of an object
6 which is sensed under sensing illumination light, said
7 tristimulus value calculation means calculating the
8 tristimulus values using spectral reflectance data of a
9 color chip formed from a plurality of unit color chips,
10 color chip sensing data obtained by sensing the color
11 chip with an input device under the observation
12 illumination light, spectral sensitivity data of said
13 input device, and color matching function data;

14 means for calculating an output color image signal
15 based on the calculated tristimulus values; and

16 means for outputting a color image based on the
17 output color image signal.

1 Claim 2 (original): A system according to claim 1,
2 wherein said tristimulus value calculation means
3 multiplies the color chip sensing data by a matrix
4 obtained from a relationship between a product of the
5 spectral reflectance of the object and color matching
6 functions and a product of the spectral reflectance data

7 of the color chip and the spectral sensitivity of said
8 input device, thereby calculating the tristimulus values.

1 Claim 3 (original): A system according to claim 1,
2 wherein said tristimulus value calculation means obtains
3 the tristimulus values as a linear sum of basis function
4 tristimulus values obtained by multiplying the color chip
5 sensing data by a matrix obtained from a relationship
6 between a product of a plurality of basis functions of
7 the spectral reflectance of the object and color matching
8 functions and a product of the spectral reflectance data
9 of the color chip and the spectral sensitivity of said
10 input device.

1 Claim 4 (previously presented): A system according to
2 claim 1, wherein said input device comprises a digital
3 camera.

1 Claim 5 (original): A system according to claim 1,
2 wherein the color chip has a plurality of unit color
3 chips having independent spectral reflectances and
4 arrayed in a matrix.

1 Claim 6 (original): A system according to claim 1,
2 wherein said means for outputting the color image
3 comprises a monitor, and said means for outputting the

4 output color image calculates the output color image on
5 the basis of characteristics of said monitor.

1 Claim 7 (original): A color reproduction system
2 comprising:

3 first image sensing means for sensing an object
4 under sensing illumination light;

5 means for calculating a spectral reflectance of
6 image data of the object sensed by said first image
7 sensing means on the basis of spectral sensitivity data
8 of said first image sensing means, spectrum data of
9 the sensing illumination light, statistic data of
10 a spectral reflectance of the object, and outputting
11 spectral reflectance image data corresponding to the
12 calculated spectral reflectance;

13 second image sensing means for sensing a color chip
14 under observation illumination light;

15 means for calculating tristimulus values of the
16 object under the observation illumination light on the
17 basis of the output spectral reflectance image data,
18 color chip image data of the color chip sensed by said
19 second image sensing means, spectral sensitivity data of
20 said second image sensing means, color chip spectral
21 reflectance data representing a spectral reflectance
22 distribution of the color chip, and color matching
23 function data;

24 means for calculating an output color image signal
25 on the basis of the calculated tristimulus values; and
26 means for outputting a color image on the basis of
27 the output color image signal.

1 Claim 8 (original): A system according to claim 7,
2 wherein each of said first image sensing means and said
3 second image sensing means comprises a digital camera.

1 Claim 9 (original): A system according to claim 7,
2 wherein the color chip has a plurality of unit color
3 chips having independent spectral reflectances and
4 arrayed in a matrix.

1 Claim 10 (original): A system according to claim 7,
2 wherein said means for outputting the color image
3 comprises a monitor, and said means for outputting the
4 output color image calculates the output color image on
5 the basis of characteristics of said monitor.

1 Claim 11 (original): A color reproduction system
2 comprising:
3 first image sensing means for sensing an object
4 under sensing illumination light;
5 means for outputting expansion coefficient data
6 which is represented as a linear sum of basis functions
7 of a spectral reflectance of the object on the basis of

8 spectral sensitivity data of said first image sensing
9 means, spectrum data of the sensing illumination light
10 and statistic data of a spectral reflectance of the
11 object;
12 second image sensing means for sensing a color chip
13 under observation illumination light;
14 means for calculating tristimulus values of the
15 object under the observation illumination light on the
16 basis of the output expansion coefficient data, color
17 chip image data of the color chip sensed by said second
18 image sensing means, spectral sensitivity data of said
19 second image sensing means, color chip spectral
20 reflectance data representing a spectral reflectance
21 distribution of the color chip, and color matching
22 function data;
23 means for calculating an output color image signal
24 on the basis of the calculated tristimulus values; and
25 means for outputting a color image on the basis of
26 the output color image signal.

1 Claim 12 (original): A system according to claim 11,
2 wherein each of said first image sensing means and said
3 second image sensing means comprises a digital camera.

1 Claim 13 (original): A system according to claim 11,
2 wherein the color chip has a plurality of unit color

3 chips having independent spectral reflectances and
4 arrayed in a matrix.

1 Claim 14 (original): A system according to claim 11,
2 wherein said means for outputting the color image
3 comprises a monitor, and said means for outputting the
4 output color image calculates the output color image on
5 the basis of characteristics of said monitor.